

DNRC WRD: **Replacement Diversion Dam for the Deadman's Basin Water Project** (Wheatland, and Gold Valley Counties).

The Deadman's Basin Water Project (DMBWP) is owned By DNRC and operated by the Deadman's Basin Water Users Association. Via its diversion dam and an 11.5-mile-long, 600-cfs supply canal, the Project fills a 76,900 acre-feet, off-stream reservoir and supplies water to the Musselshell Valley by means of two delivery canals, which total 12.5 miles in length.

- Deadman's Basin Water Project, constructed as a collaborative effort by the State of Montana Water Conservation Board and federal WPA, was completed in 1941.
- 40,500 shares marketed annually
- 30,000 acres irrigated
- 160 ranch families and 3 small municipalities (Ryegate, Melstone, Roundup) are directly reliant on the Project's water.

2011 Floods on the Musselshell severely damaged the DMBWP Diversion Dam

- Severe hydraulic forces cracked the concrete of the Diversion Dam and undercut its soil support.
- The diversion structure is now on the brink of failure.
- Failure of the diversion dam will: leave more than a hundred irrigators without crop water and three small communities without general purpose municipal water.

In its present condition, the diversion dam

- Creates dangerous hydraulic conditions for recreationalists and the Project operators.
- Forms a barrier to fish migration.

The DMB Diversion Dam requires a stronger, safer, more fish friendly design replacement.

- DNRC-WRD plans to use the \$300,000 RDGP Grant funding to replace the existing structure with a rock-ramp diversion dam.
- A rock-ramp dam will provide fish passage at low-head conditions,
- A rock-ramp dam is more cost effective to construct than a concrete diversion dam.

DNRC-SWPB along with the Deadman's Basin Water Users Association (DBWUA) have committed a combined \$190,000 to accompany the proposed RDGP Grant funding. This project will take about six months to design and construct. Its performance will be monitored such that this project can serve as an example for other diversion dams in Montana.

Funding Source	Amount	Committed (Yes or No)
RDG Grant (maximum \$300,000)	\$ 300,000	No
Applicant (DNRC)	\$ 20,000	Yes
Deadman's Basin Water Users Association)	\$ 170,000	Yes
Other Source (FEMA)	\$ 0	No
PROJECT TOTAL: \$ 490,000		

Estimated Total Project Cost \$490,000



Aerial Photo – Deadman's Basin Supply Canal Headworks – Diversion and Headgate



Example of rock-ramp rapids fishway constructed at Riverside Dam at East Grand Forks, MN